What is claimed is:

1. A washing machine comprising:

a housing;

a tub installed in the housing to store water;

a drum rotatably installed in the tub to hold a laundry; and

a water level sensing apparatus for sensing a water level to provide an appropriate water level for each washing step, the water level sensing apparatus comprising:

an air chamber storing a predetermined amount of air to communicate with the tub to have a pressure of the water work on the stored air;

a sensor installed at the tube to sense the water level by sensing an air pressure in the tube; and

a protecting member for preventing disassembly and breakage of the air chamber and the tube.

2. The washing machine as claimed in claim 1, wherein the air chamber is connected to a drainpipe connected to the tub for discharging the water.

3. The washing machine as claimed in claim 2, wherein the air chamber is connected to an extension pipe diverging from the drainpipe.

4. The washing machine as claimed in claim 1, wherein the tube is connected to an extension pipe extending from the air chamber to be connected to the air chamber.

5. The washing machine as claimed in claim 1, wherein the protecting member encloses a connecting portion between the air chamber and the tube.

6. The washing machine as claimed in claim 1, wherein the protecting member is a rib extending from the air chamber to enclose a connecting portion between the air chamber and the tube.

7. The washing machine as claimed in claim 6, wherein the rib is cylindrical.

8. The washing machine as claimed in claim 6, wherein the rib extends higher than the connecting portion.

9. The washing machine as claimed in claim 1, wherein the protecting member securely fixes the air chamber to a peripheral part.

10. The washing machine as claimed in claim 9, wherein the protecting member comprises a boss formed at the tub and a flange formed at the air chamber to be coupled to the boss.

11. The washing machine as claimed in claim 1, further comprising a control apparatus for controlling a supply and discharge of the water by being provided with the sensed water level from the water level sensing apparatus.

12. An apparatus for sensing a water level of a washing machine, the apparatus sensing the water level to provide each washing step with an appropriate water level, the apparatus comprising:

an air chamber storing a predetermined amount of air to communicate with the tub to have a pressure of the water work on the stored air;

a sensor installed at the tube to sense the water level by sensing an air pressure in the tube; and

a protecting member for preventing disassembly and breakage of the air chamber and the tube.

13. The apparatus as claimed in claim 12, wherein the air chamber is connected to a drainpipe connected to the tub for discharging the water.

14. The apparatus as claimed in claim 13, wherein the air chamber is connected to an extension pipe diverging from the drainpipe.

15. The apparatus as claimed in claim 12, wherein the tube is connected to an extension pipe extending from the air chamber to be connected to the air chamber.

16. The apparatus as claimed in claim 12, wherein the protecting member is a rib extending from the air chamber to enclose a connecting portion between the air chamber and the tube.

17. The apparatus as claimed in claim 16, wherein the rib is cylindrical.

18. The apparatus as claimed in claim 16, wherein the rib extends higher than the connecting portion.

19. The apparatus as claimed in claim 12, wherein the protecting member securely fixes the air chamber to a peripheral part.

20. The apparatus as claimed in claim 9, wherein the protecting member comprises a boss formed at the tub and a flange formed at the air chamber to be coupled to the boss.